

FLIGHT

The
**AIRCRAFT
ENGINEER
&
AIRSHIPS**

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 695. (No. 16, Vol. XIV.)

APRIL 20, 1922

[Weekly, Price 6d.
Post free, 7d.]

Flight,

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C. 2

Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free:

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.*

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

* European subscriptions must be remitted in British currency

CONTENTS

	PAGE
Editorial Comment	
The Weybridge Fatality	223
The D. of R. and Farnborough	224
The Racing Season Opens at Waddon	224
Croydon Meeting	225
The Supermarine Single-Seater Fighting Scout	226
The Second Croydon Aviation Race Meeting	230
The Death of Sir Ross Smith and Lieutenant Bennett	232
London Terminal Aerodrome	233
London-Continental Services	234
Notices to Airmen	234
Royal Air Force	235
Royal Air Force Intelligence	235
In Parliament	235
Personals	236
The London Aero-Models Association	236

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

1922.

June 1	Entries close for Schneider Cup Race
June 5	R.Ae.C. Easter Race Meeting, at Waddon
June 23-25	International Competition for Touring Aero-planes, Brussels
July 6-20	French Gliding Competition
Aug. 6	Gordon-Bennett Balloon Race, Geneva
Aug. 7	R.Ae.C. Race Meeting, at Waddon
Aug. (last fortnight)	Schneider Cup Seaplane Race, at Naples
Sept.	Tyrrhenian Cup, Italy
Sept.	Italian Grand Prix
Sept. or Oct.	R.Ae.C. Race Meeting, at Waddon
Sept. 22	Coupe Deutsche (300 kil.)

1923.

Dec. 1	Entries Close for French Aero Engine Competition
-------------	--

1924.

Mar. 1	French Aero Engine Competition.
-------------	---------------------------------

INDEX FOR VOL. XIII.

The Index for Vol. XIII of FLIGHT (January to December, 1921) is now ready, and can be obtained from the Publishers, 36, Great Queen Street, Kingsway, W.C. 2. Price 1s. per copy. (1s. 1d. post free).

EDITORIAL COMMENT



The Weybridge Fatality

ONCE again it becomes our painful duty to record an aviation accident resulting in the death of two flight pioneers. Personally, we feel the fatality all the more keenly because we were privileged to spend several hours of the day before their death with Sir Ross Smith and Lieutenant Bennett. The occasion was a visit to the Vickers Weybridge works to discuss with Sir Ross the great flight and to inspect the machine on which it was to be made. Modest to a degree, both he and Bennett simply avoided discussion of their previous achievements, preferring to speak of their new plans. Particularly was Sir Ross loud in his praise of the manner in which those responsible for the machine had worked and put the best they knew into it, so that he and his two companions might have the finest equipment it was possible for man to devise. He also paid a glowing tribute to the "Shell" group for the perfect way in which the distribution of petrol to the various parts of the globe had been provided for by their organisation. And next day came word that he and Bennett had passed away. The news was simply stunning. It seemed incredible that those two who, but a few hours previously, had been discussing so cheerfully and confidently their great plans were now no more, and that never again should we grasp the hands that had already done so much, and from which still more was anticipated. Sir Ross Smith was nothing if not a pure sportsman, and he is stated to have said, when discussing the possibility of anything going wrong on the flight and failure resulting, that there should be no blaming of anybody, "Australians don't squeal."

So in his misfortune, could he express his views, we are sure he would have wished for no unnecessary lamenting of his sad fate, great blow that it is to those near and dear to him. He probably died as he

would have wished to die, if the end had to come so soon—fighting to the last to master his machine.

As regards the cause of the accident, this is abundantly clear from the accounts of expert eye-witnesses. The machine got into a spin, from which it never fully recovered, at any rate not until it was too late to flatten out and effect a safe landing. As to the reasons for the machine getting into a spin, we can never know for certain. But it appears probable that lack of experience on this particular type of machine may have been a contributory cause. To begin with, we believe we are correct in saying that Sir Ross had not done very much flying on any machine during the last few months. All pilots of experience will agree that being away from regular practice for even a few weeks, results in a familiar machine feeling strange. How much more so when the machine is of an unfamiliar type. No two machines, even of the same model and identical to all appearances, feel exactly alike. Further the flying boat type of machine has little idiosyncrasies all its own. It requires different handling and different control from a land machine of the tractor type. It is therefore in no way casting the slightest slur on the skill of Sir Ross as a pilot to assume as a possible explanation that the machine felt more strange to him than he had expected, and that indecision at a critical moment—an indecision which may have lasted only the shortest of times—may have lost him his chances of recovery.

It appears quite certain from the evidence given at the inquest that no part of the machine broke in the air, and that to a pilot familiar with the type and its construction, the machine was in perfect flying trim and behaving splendidly. One is therefore forced to the conclusion, as the only logical one, that some error of judgment was the cause of the spin which ended so sadly. Beyond that it is not possible to go, and at that we must be content to leave it. It means that two more valuable lives have been sacrificed in order that the linking up and binding together of the Empire by the ways of the air may be found. It behoves us to carry on in the same spirit, that the lives of these two pioneers, and the many that have preceded them, may not have been sacrificed in vain.

The D. of R. and Farnborough

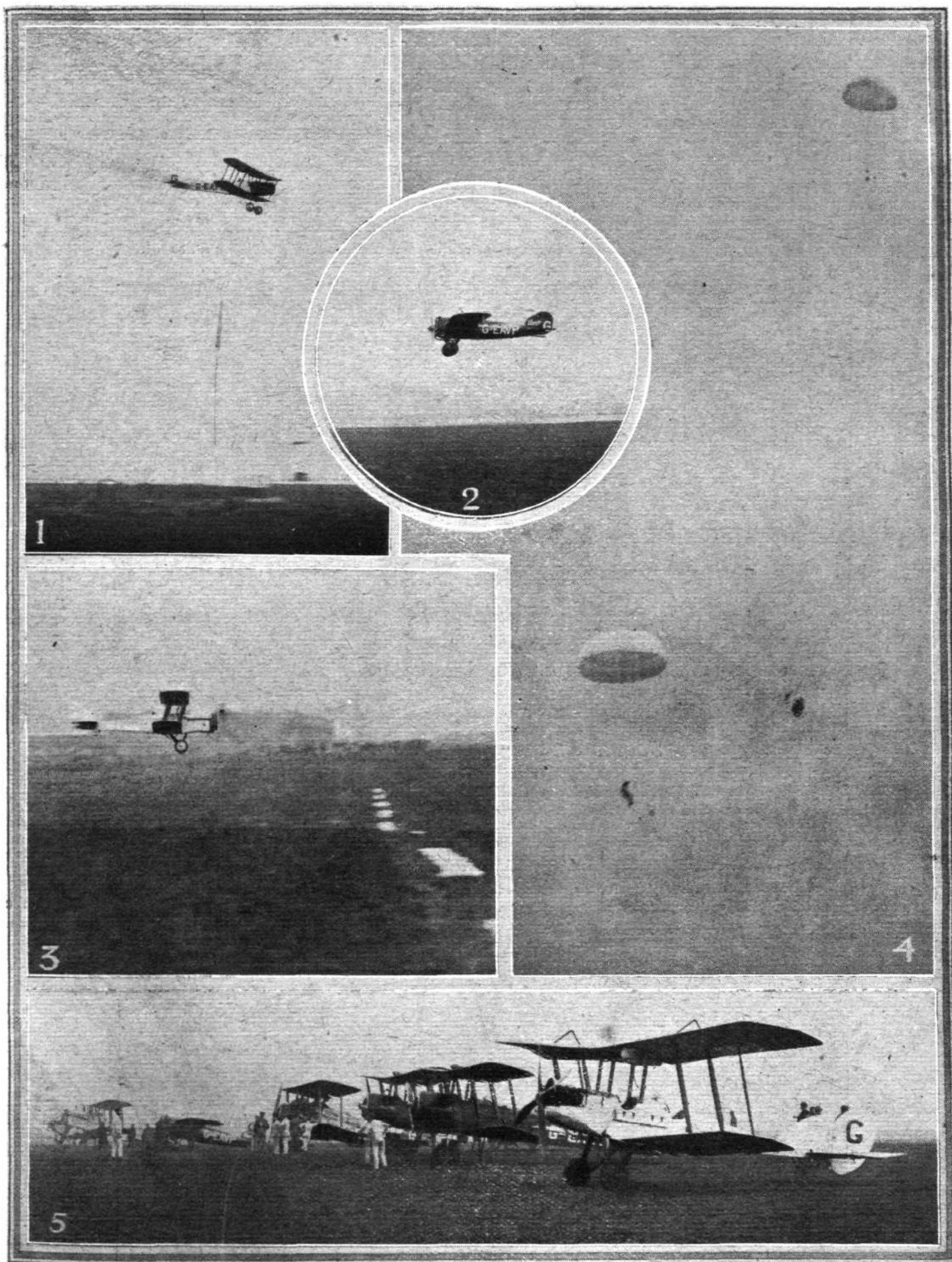
It is by now fairly common knowledge that a great portion of the Directorate of Research is, in the interest of economy, to be transferred to Farnborough. That is all to the good, and, on the face of it, would appear to be a very sound, common-sense decision, and one which will result in economy as well as tending towards a closer co-operation between the D. of R. and the Royal Aircraft Establishment. We sincerely trust, and have no intention of denying, that this, and this only, is at the back of the decision. But it should be borne in mind that "Research" as now understood is a somewhat elastic term. The D. of R. himself stated at the recent Air Conference that a large proportion of his department was engineering. That being so, it appears to us that the removal of the department, or the bulk of it, to Farnborough, may carry with it the danger of a return to the old evil days, when the R.A.F., as it then was, grew to be in direct competition with private designing and construction firms. We do not for a

moment suggest that there is any danger of "The Factory" resuming manufacture on any large scale. The results of that policy are still too fresh in mind to allow of that possibility being even contemplated. But it does appear to us that the transfer from Kingsway to Farnborough may give rise to the danger of the Department of Research becoming even less of what its name suggests it should be, and more of an engineering department than those who believe in the value of pure research as distinct from *ad hoc* experiment like to see. We may be wrong—we sincerely trust we are—and there may be no such intention behind the move, but the danger is there, and we have thought it our duty to sound this note of warning. We certainly do not want to see our private designing firms reduced to the level of war-time sub-contractors building machines to other people's designs.

The Racing Season Opens at Waddon

The air racing of the season opened on Easter Monday with a series of short contests, the competing machines during the whole time being in sight. This is an admirable scheme, and helps to sustain the interest, which would be apt to lag were the competitors out of sight for long periods. In our report on the races we have advanced certain criticisms of the arrangements, which were certainly not all that they might have been. We are offering these in no carping spirit, but merely because we wish to see air races and air competitions of all sorts becoming one of the most popular features of the London summer season. In the main the Royal Aero Club is doing well with the sporting side of aviation, and it is in the minor incidentals that shortcomings are most noticeable. These can, we feel sure, be remedied with a little goodwill, and if that is done we are certain that the public response will be such as to recompense the organisers for the extra trouble taken.

We have previously questioned the wisdom of the decision to transfer the scene of these competitions from Hendon to the London Terminal Aerodrome. We are still very much in doubt, and still consider Waddon but ill-suited to the holding of race meetings where really fast machines are to be flown. In its present form and state Waddon is a very poor aerodrome for a racing machine, and we would suggest that, until the present offices, sheds, and other buildings have been transferred from Plough Lane across to the buildings occupied by the A.D.C., the holding of pure speed races should not be organised at Waddon. Secondly, arrangements could surely be made, even now, with the railway companies for running more trains to Waddon station, thus saving visitors the journey on the trams from Croydon to the aerodrome. These trams must easily be the worst in London, and if a frequent direct train service were run (and made known) to Waddon station it would be a great gain. Later on, when the main buildings of the air station are at the A.D.C. premises, it will, of course, be possible to run trains direct to the aerodrome itself. But even without that, much might be done to facilitate and render less irksome the journey to and from the London Terminal Aerodrome. We would suggest that the Club take the matter up seriously with the remnants of the Department of Civil Aviation.



AT THE CROYDON MEETING ON EASTER MONDAY : 1. Bert Hinkler on the Avro-Viper winning the Second Waddon Handicap. 2. Uwins getting off on the Bristol monoplane, with 100 h.p. Bristol "Lucifer" engine. 3. Stocken, on the D.H.9A, 400 h.p. Liberty, winning the Club Handicap. 4. Newall making a double parachute descent in "Guardian Angel" parachutes. 5. The machines lined up for the Club Handicap.

THE SUPERMARINE SINGLE-SEATER FIGHTING SCOUT "SEA KING," MARK II.

An Interesting Amphibian Flying Boat, with Hispano Engine

It is, unfortunately, an indisputable fact that, for some reason or other which is not at all clear, the seaplane type of machine has not received, in this country, the attention which it would appear to merit. In view of the fact that the different parts of our Empire are separated by leagues of ocean, it might have been thought that this type of machine would be the first to come to mind in attempting to visualise the advantages of air travel and air defence. Yet the fact remains, that the seaplane has had very little encouragement, both from the Government and from commer-

but this is not the place, nor have we the space here, to do so.

If the seaplane pure and simple is of the very greatest potential value, its latest development, the amphibian, is still more so, owing to its capacity for taking off from, or alighting on, land and water with equal facility. In the case of a commercial machine, this means that a service can be run between two cities which are situated on the coast, or which have running through them rivers suitable for use as "aerodromes," but which are otherwise separated



THE SUPERMARINE "SEA KING": Side view.

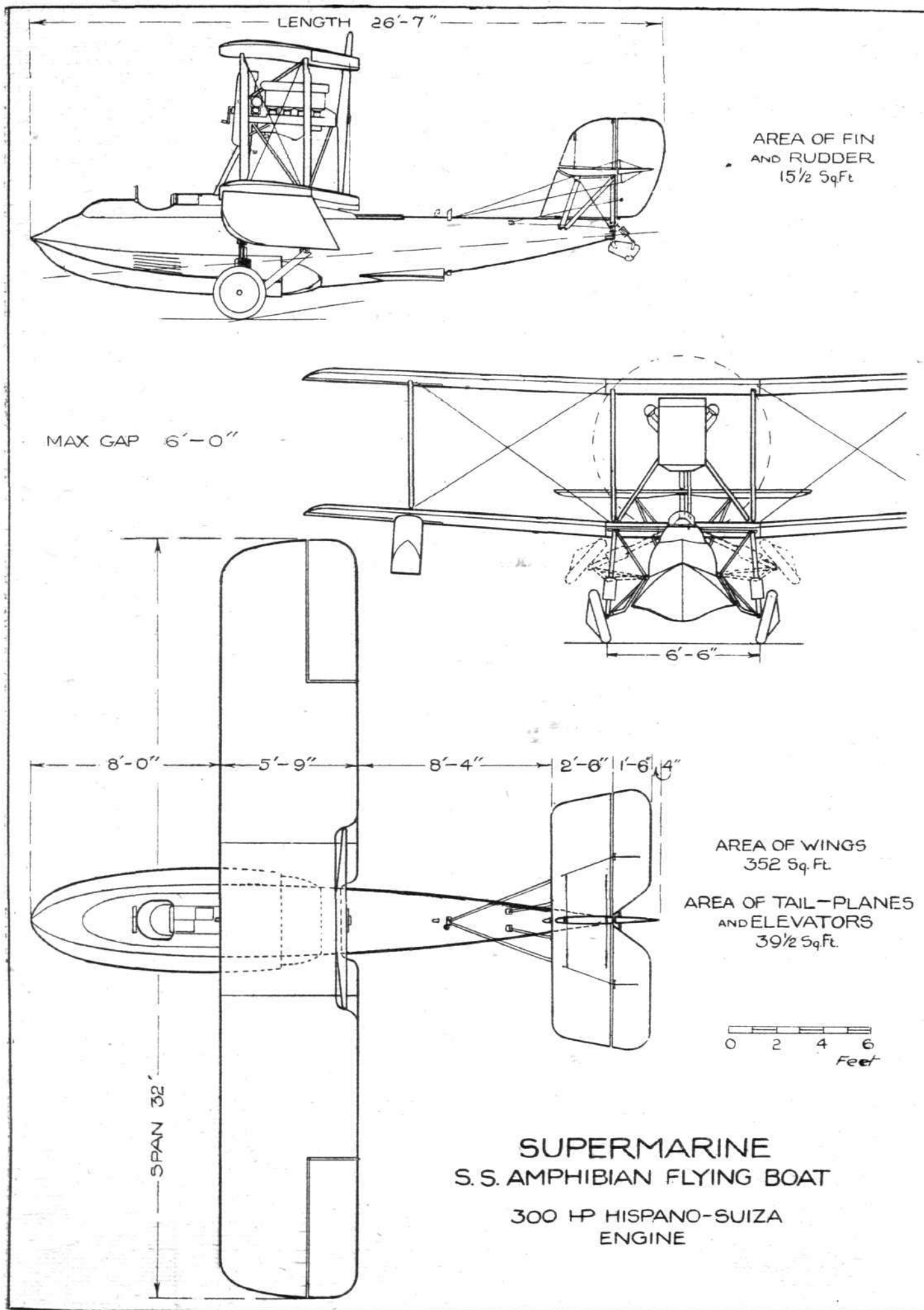
cial users of aircraft. It is, therefore, all the more creditable that a few of our firms have, in spite of the severe handicaps imposed by a relative lack of incentive, "carried-on" with seaplane design and construction, in the certain knowledge that sooner or later this type is bound to gain the recognition which it deserves. One might fill columns in enumerating the various uses to which seaplanes can be put, both commercial and service, and yet not exhaust the subject,

partly by the sea and partly by land. The London-Paris service is a case in point. It has already been demonstrated that it is possible to leave the Thames at Westminster, and to alight on the Seine in the centre of Paris, or *vice versa*, making the complete journey in about two hours, and saving the tedious run to and from the aerodromes to the business section of the respective cities.

For service purposes, the amphibian scores also, as in the



THE SUPERMARINE "SEA KING": TAXYING: Note the wheels lifted clear of the water.



THE SUPERMARINE "SEA KING": General arrangement drawings.

course of a war, it is often necessary for seaplanes to go inland for considerable distances, and for land machines to fly far out to sea. A machine which can, for instance, fly off the gun turrets of a battleship, scout over the sea and, if desired, far inland, returning either to the ship or alighting on the sea at any desired point, is obviously at a very great advantage as compared with a pure seaplane or a land machine.

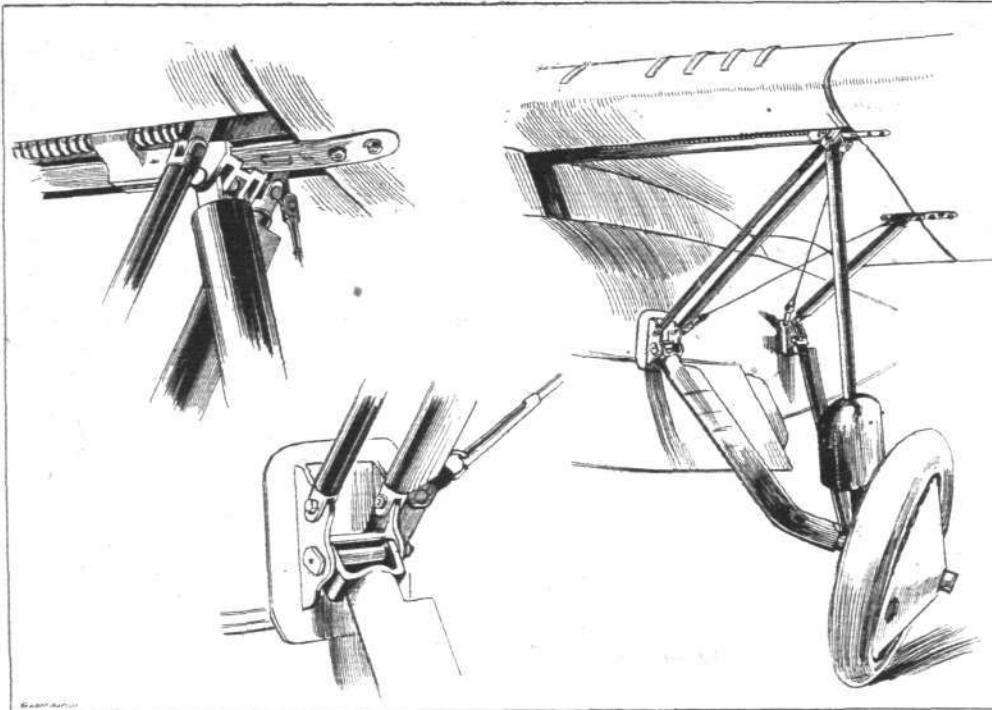
teristics of an aeroplane. Or one can start with a boat which is seaworthy in the first instance, and then proceed to make this boat fly. The Supermarine Works have always followed the latter procedure, and the hulls of their machines are boat-built structures on to which have been added the necessary wings, etc. Now it will be obvious that, in the initial stages of developments, the one type will probably have the better performance, but at the cost of seaworthiness, whereas the other will be substantial, seaworthy and, probably, somewhat heavy and consequently have an inferior performance. Thus at first, there will be a marked difference in the qualities of the two types, and the choice will depend upon the particular purpose for which a machine is wanted. There is, undoubtedly, room for both types. As time goes on, however, improvements will be made to both types, tending to improve the seaworthiness of the one and the performance of the other, and the time comes when the two types are practically on an equal footing. This would appear to be the logical development, and it is interesting to note that history is already beginning to prove that this is actually what is happening.

In the case of the Supermarine amphibian flying boat "Sea King," which forms the subject of this article, and photographs of which were published in our issue of March 30, we have a craft which represents the development of a seaworthy hull, fitted with wings and an engine which give it a performance equal, or nearly so, to that of a land machine of the same power. This result has been

attained by years of constant application to the problems involved, and always with this idea in view that a start must be made with the boat hull, the performance being a second consideration, although it should be as good as it is possible to make it. Viewed in this light, one is better able to appreciate what it is the "Sea King" represents.

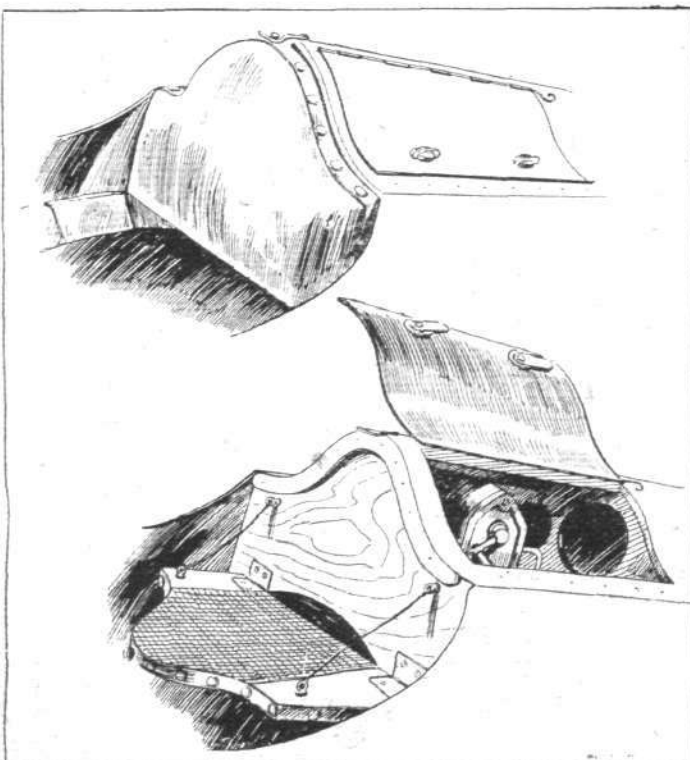
Designed as a single-seater fighting scout, for use with naval units or squadrons, the "Sea King," Mark II, possesses an unusual degree of manoeuvrability, being capable of all the stunts which one usually associates with land machines only. The machine can be, and has been repeatedly, looped, rolled, spun, and stunted in every conceivable way. It is thus an ideal machine for fighting, while combined with these qualities it possesses a great amount of inherent stability, a combination which is extremely difficult of attainment, more especially in a machine of the flying boat type. We are informed, by a pilot who has flown the machine extensively, that the "Sea King" is entirely free from that difference in trim, according to whether the engine is "on" or "off," which was at one time thought inseparable from machines of the flying boat type. Once in the air, the machine can be flown "hands off," with the greatest ease, its longitudinal trim being such as to require no force on the control stick.

On the water, the "Sea King" handles remarkably well, showing no tendency to porpoising, and being very seaworthy

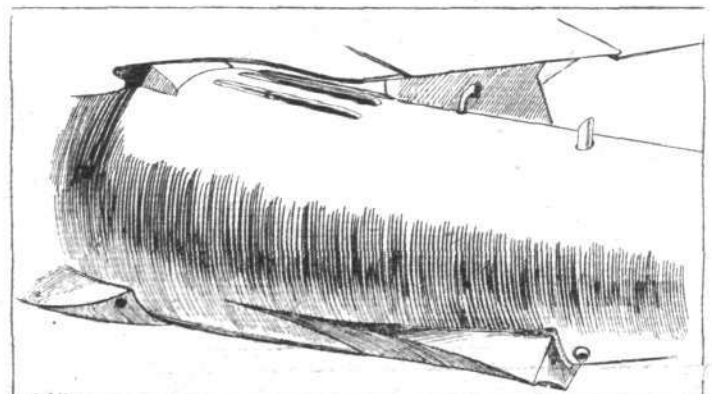


THE SUPERMARINE "SEA KING": General arrangement and details of the retractable undercarriage.

*Among the firms who have, from the early days of flying, been believers in, and producers of, seaplanes are the Supermarine Aviation Works, Ltd., of Southampton, who have made a speciality of flying boats and amphibian flying boats. In designing a seaplane, it is possible to attack the problem from two entirely different points of view. One can produce an aeroplane which will get off from and alight on the sea, but which retains, in many respects, the charac-



THE SUPERMARINE "SEA KING": The pilot's back rest hinges down to form a step so as to facilitate reaching the starting handle of the engine. The starting magneto is housed in the fairing on the port side. On the starboard side is the petrol filler cap.



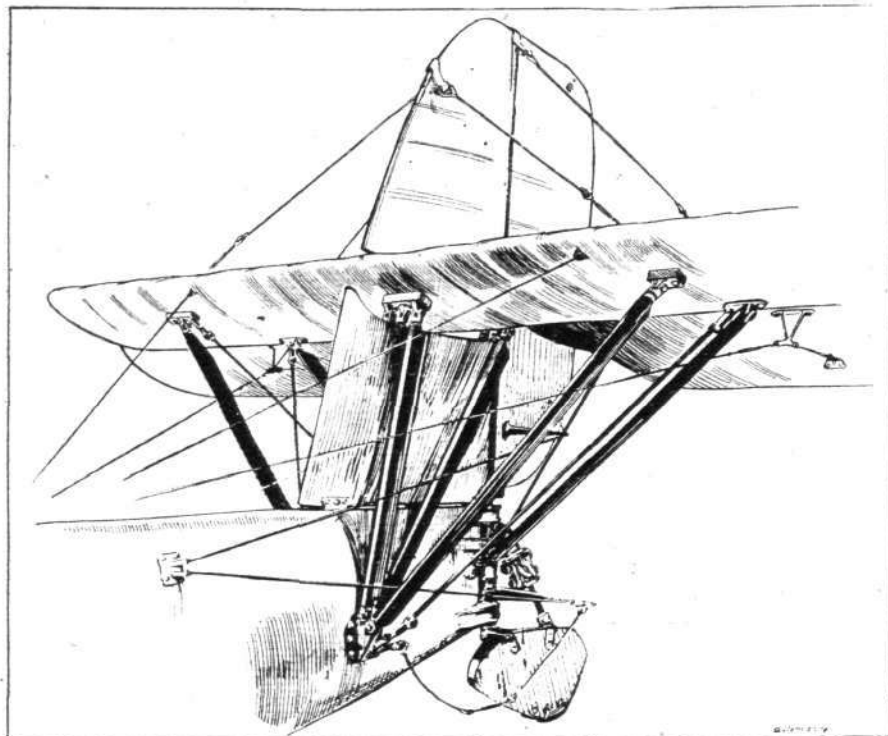
THE SUPERMARINE "SEA KING": The rear step is "ventilated" by a tube running through the hull.

for a machine of such small dimensions. We understand that she has been put through all sorts of manœuvres on the sea, in a wind of 30 m.p.h., and has proved capable of

towing tackle is conveniently arranged in and around the cockpit. For starting the engine, a starting handle is provided, and in order the better to reach this, the pilot's back rest is so arranged as to fold down and form a step, as shown in one of our sketches. In the fairing behind the pilot's head are housed, on one side, the starting magneto, and on the other the filler cap of the petrol tank, which latter is carried inside the hull, approximately on the c.g. of the machine.

The undercarriage consists of two Palmer wheels, mounted on bent axles, hinged to the sides of the hull, and strutted to the hull and to the lower plane. A worm runs across the top of the hull and engages with metal claws running along a steel strip guide bolted to the front spar of the lower plane. The accompanying sketches will indicate the arrangement, which is very neat and simple, and yet sufficiently robust to withstand taxiing, even on rough ground. When the worm is rotated, the claws are pulled inwards, bringing with them the stout tubes carrying the rubber shock absorbers, and raising the wheels upwards and outwards until clear of the water. It will be noticed that the strutting of the undercarriage is so arranged that landing shocks are not transmitted through the hull. At the stern is a small combined tail skid and water rudder, working in conjunction with the air rudder. We are told by the pilot who has flown the machine on all its tests that on the ground it handles remarkably well, and is as easy to steer as a motor-car.

The engine, a 300 h.p. Hispano-Suiza, is mounted on a structure of steel tubes, which is entirely independent of the wing bracing, so that the engine can be removed without interfering with the wings, or, conversely, the wings may be taken off without interfering with the engine. It is neatly



Sketch showing general arrangement of tail of the Supermarine "Sea King." The tail plane is negatively cambered.

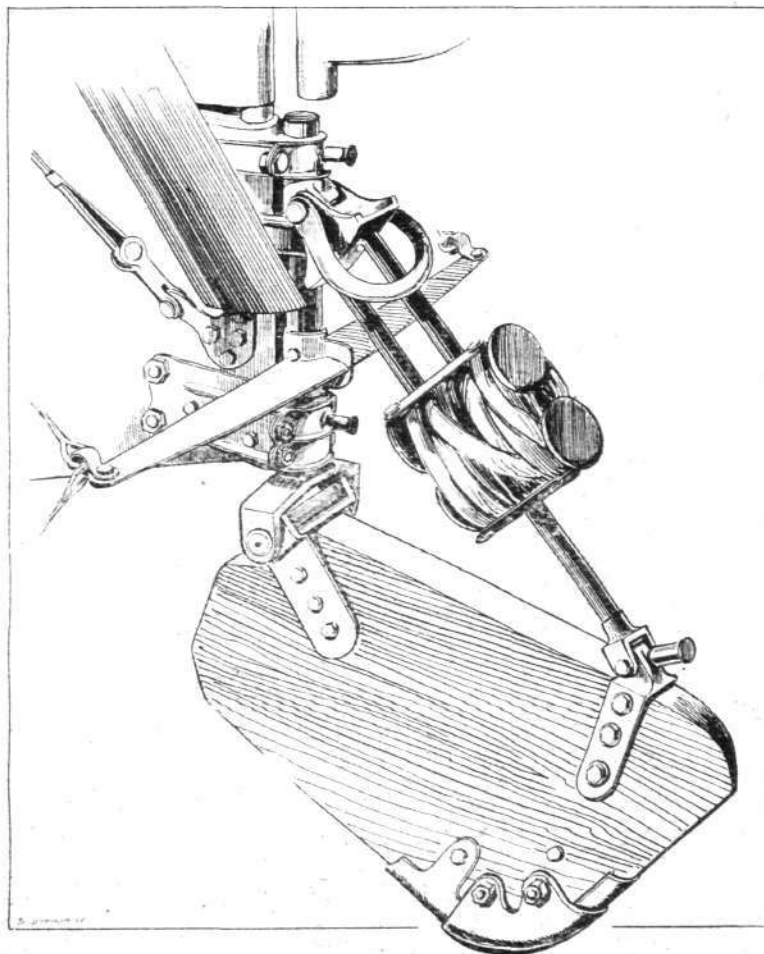
riding out a fairly heavy sea. In getting off and alighting, the machine is very dry and comfortable for the pilot, and the view from the cockpit is particularly unobstructed, another feature, which is of great importance in a machine intended for fighting.

As already mentioned, the performance is extremely good, the top speed being 125 m.p.h. at sea level, and the ceiling 20,500 ft. The climb to 10,000 ft. only occupies 12 minutes, and the alighting speed is in the neighbourhood of 50 m.p.h. Sufficient fuel is carried for about two hours at top speed, and in this connection one cannot help wondering what would have been the result of the Jutland battle had our fleet been provided with a couple of squadrons of such machines.

The general arrangement of the "Sea King" is well shown in the accompanying scale drawings and photographs, while some of the constructional details form the subject of our sketches. The boat hull is of the typical Supermarine type, boat-built and through-fastened, with copper or brass fixings throughout. The mahogany single-skin planking is riveted to the rock elm timbers and frames, and covered externally with fabric suitably treated with pigmented dope. The two steps are formed by entirely separate units, attached to the main hull, and can, therefore, be renewed in case of extensive damage. Should the hull itself, which is of approximately circular cross-section, be damaged, it is quite possible to repair it by scarphing in new planks where required.

In order to reduce air resistance a metal fairing, provided with large holes for the easy filling and emptying of water, is fitted behind the main step. This fairing can be seen in several of our illustrations. The rear step is provided with a tube running through the hull, and admitting air to the step when the machine is taxiing on the water, thus preventing the rear portion of the hull from being sucked under.

The pilot's cockpit is in the nose of the hull, from which position the pilot has an excellent view, an important consideration not only for fighting, but also for landing on the deck of a ship. His controls are mounted on the triangular tubular frame so well known in all Supermarine boats, and whose function it is to allow the circular hull to flex and "give" in a seaway, without interfering with the smooth working of the controls. When the machine is used for fighting, a Lewis gun will be mounted in the nose of the hull, where it is very accessible by the pilot. A very complete set of instruments is provided, and all necessary mooring and



The very substantial combined tail skid and water rudder of the "Sea King."

enclosed in an aluminium nacelle, and drives a small-diameter four-bladed pusher airscrew. The radiator, which is provided (Concluded on page 236.)

THE SECOND CROYDON AVIATION RACE MEETING

The Season Opened at Waddon

IN many ways the first flying meeting of the season, held at the London Terminal Aerodrome, Waddon, on Easter Monday, was reminiscent of the good old days at Hendon. In fact, one has to go back a considerable number of years to remember certain conditions and arrangements as primitive as some of those obtaining at Waddon during the races. When, nevertheless, the man in the street and his wife streamed out to the aerodrome in their hundreds and thousands, by motor, train, tram, 'bus, and on foot, in weather which looked anything but promising, and stayed in the various enclosures until all races had been flown, it speaks volumes for the general interest which is still being taken in aviation of a sporting nature. There were many who had expected to find a very poor attendance, and who were agreeably surprised to see the enclosures, especially the 1s. one, thronged with people. Nor, in spite of certain shortcomings in the arrangements, did the interest lag throughout the afternoon. Having discovered that people will still go to flying meetings in large numbers, it now rests with the Royal Aero Club to improve the organisation and arrangements until they are at least on a par with those of Hendon at its best, at any rate as far as lies in its power. Certain factors are perhaps outside the direct sphere of influence of the Club, and will have to be attended to by other authorities. For instance, the aerodrome is far from being ideal. The surface is very bad almost everywhere, and with certain wind directions the aerodrome is none too large for fast machines. On Monday the wind happened to be in such a direction as to give an opportunity for a good long run, but more often it blows across Plough Lane, when getting off and landing present far greater difficulties. Modern racing machines run a fair distance before pulling up, not to mention the long glide a couple of feet off the ground before the speed drops sufficiently to allow the machine to touch, and the undulating nature of the ground is a trial to any pilot not familiar with it. These, however, are matters over which, presumably, the Royal Aero Club has no control, beyond the fact that one may question the wisdom of transferring the races there from Hendon. Having done so, these drawbacks have to be put up with, and it is to be hoped that during the year or so which will probably elapse before the air establishment can be transferred to the buildings now occupied by the A.D.C., and the aerodrome correspondingly improved, no serious accident will occur to mar these flying meetings.

With regard to the shortcomings of the organisation, the catering arrangements were of a somewhat primitive nature.

One had to stand up while having tea, no tables or chairs being provided. To visitors who had to stand the whole afternoon in the enclosures this was rather trying, and Trust Houses ought to be able to do better than that. The sanitary arrangements also left a great deal to be desired, and were of such a crude nature that they cannot possibly be tolerated again at the next meeting.

In the running and organisation of the races themselves there was room for a great deal of improvement. Not only did the various events not start to time (with this we are not inclined to quarrel violently, as delays were, to a great extent, due to the weather), but the absence of numbers on the machines must have been very perplexing to ordinary visitors, especially as all the machines were given numbers on the programme. It is not everyone who realises that when he sees on a machine the letters G-EATD, the only letters that he need take notice of are the last two. It is a fairly safe guess that the majority of people began reading out all the letters, and in all probability only got as far as the G-EA by the time the machine had passed into such a position that the last two letters were hidden. In the old Hendon days it was always possible to paint numbers on the machines. Why not now? If standard numbers were chosen, these could be kept in readiness and need not be stuck on the machines until the last moment. After the race they could easily be removed and used again at the next meeting. The absence of numbers must have been a trial to the timekeepers as well as to the public.

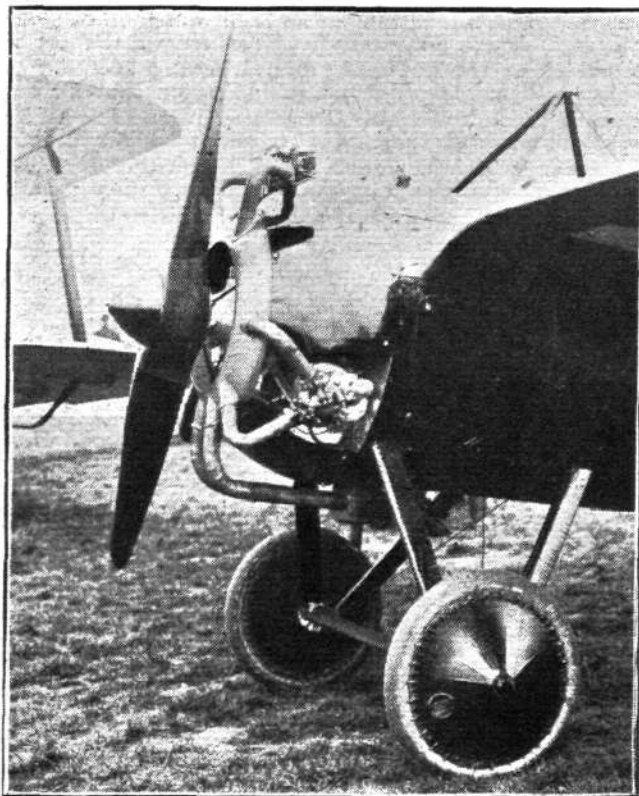
Then we certainly also think that the Press is entitled to a "grouse." No tent or shelter of any sort was provided for Press representatives, nor, as far as could be ascertained, was anyone given charge of collecting and issuing information such as lap times, etc., to the Press. At Hendon there was a nice little Press club, presided over by the genial "Charlie" Lane, who always had the latest information over the 'phone and handed it out to any Press representative requiring it. At Waddon there was no telephone in the enclosure over which reports could be sent to the various daily papers. In the future better arrangements will have to be made—if the Press is to be given a fair chance of helping aviation by its accounts of the meetings.

Having relieved ourselves of these various criticisms, we may turn to the races themselves. The first race, the Club Handicap, was timed for three o'clock, but owing to weather conditions there was considerable delay in getting started. Three of the Avros failed to start, leaving only the G-EAXY



“ Snipers ” at Croydon : On the left, Vice-Admiral Mark Kerr, C.B., M.V.O., and on the right, Lieut.-Col. C. E. Risk, D.S.O., who competed in the balloon sniping competition. In the centre, Mr. F. P. Raynham, who piloted the Avro for Admiral Kerr.

Avro flown by Major H. Petre, and the Avro-Viper flown by Hinkler. Of other types which were non-starters in this race was the BE2E and the D.H.6. There were still ten machines left, and the race proved a very good one. The limit man was Major Petre on the Avro, 110 le Rhone, who was given 5 mins. 40 secs. start. The next to get away was Hinkler, on the Avro-Viper, whose allowance was 2 mins. 50 secs., and who was followed by Uwins on the Bristol monoplane



The Bristol "Lucifer" 100 h.p. engine, mounted in the very pretty little Bristol monoplane flown by Mr. Uwins. Considering that this engine has three cylinders only, it runs very smoothly and evenly.

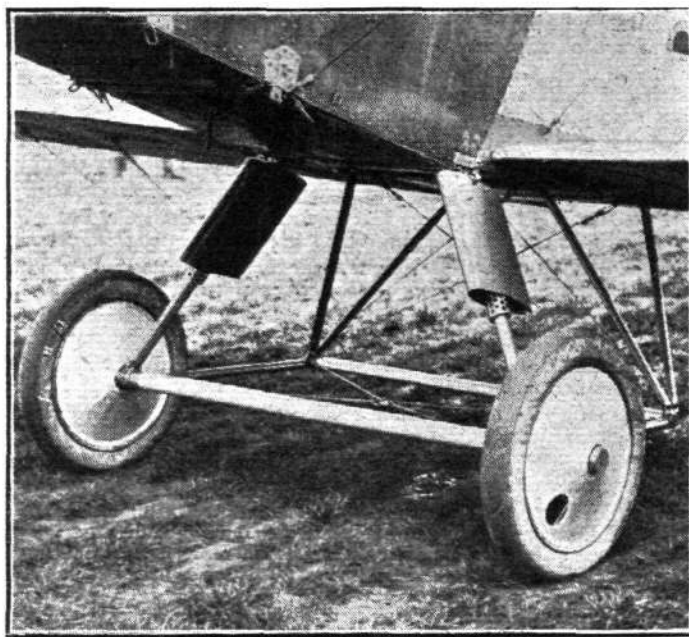
with a 100 h.p. Bristol "Lucifer" engine. Uwins' allowance was 2 mins. 35 secs. Barnard, on the D.H. 9B, 230 h.p. Siddeley "Puma," got 2 mins. 28 secs., and Muir, on the Parnall Panther, 200 h.p. B.R.2, 2 mins. 11 secs. start. Stocken on the D.H. 9A, 400 h.p. Liberty, roared off next (his allowance being 1 min. 10 secs.), followed by Flying Officer R. S. Carroll on an S.E.5A, 200 h.p. Wolseley-Viper, whose allowance was 50 secs. Flight Lieuts. Longton and Long, on Martinsyde F.4's with 300 h.p. Hispano-Suiza engines, started together at scratch, and looked very impressive as they hurled across the starting line and swung to the left over the end of the enclosures. This race was over a distance of 16 miles, being two laps of the course, and the machines were in sight practically the whole time, except when one or other disappeared behind a hedge, flying very low. The result was that Stocken on the D.H.9A came in first, followed by Barnard on the D.H.9B, with Uwins on the Bristol monoplane third.

As the machines were landing after the race an amusing incident occurred, which damaged two machines but left the pilots unhurt. Carroll had landed on the S.E.5A, and had actually got out of his machine, but had left the engine running. Long came in on one of the Martinsyde F.4 biplanes, but his machine did not pull up as quickly as was expected, and he ran into the tail of the S.E.5, smashing the rear portion of its fuselage and damaging his own undercarriage. The S.E.5 cocked its nose into the air, still with the engine running, and presented a most humorous spectacle. The engine was stopped, and the damaged machine "walked" over to its home on the other side of the aerodrome.

The second race of the day was the Second Waddon Handicap, for machines with a speed of not less than 100 m.p.h. The course was the same as that of the first race, but competitors had to cover four laps instead of two, bringing the distance up to approximately 32 miles. The limit man in this race was Bert Hinkler, on the Avro-Viper, whose allowance was 5 mins. 20 secs. Uwins on the Bristol mono. got 4 mins. 11 secs., and Muir on the Parnall Panther 3 mins. 28 secs. start. Barnard on the D.H.9B was given 1 min. 53 secs., and Stocken on the D.H.9A 4 secs., while

Longton on the Martinsyde F.4 started scratch. With the exception of Muir on the Panther, who retired during the race, all competitors completed the course, and the result was: Hinkler first, Uwins second, and Stocken third. The undercarriage of Hinkler's Avro-Viper is of a new type, incorporating an oleo gear which appears to be most effective in damping oscillations and preventing bouncing. When the machine gets off, the plunger slowly sinks to the bottom of the cylinder, the undercarriage "legs" coming down quite an appreciable distance. On landing, the first down is taken on the oil, before the rubbers have come into play, and at the end of its travel the plunger prevents bouncing. The result is that the undercarriage is extremely "squashy," and that no shock is felt in the cockpits of the machine. We understand that the machine has been deliberately stalled from about 20 feet, and even then did not bounce, nor was anything strained. This undercarriage certainly appears to be a great step forward, and should go a long way towards minimising breakages of machines in inexperienced hands. As flown by Hinkler, there was, of course, no need for it, but that is no reason why the type should not become very popular, as landings can be effected on very rough ground by its use.

Only two machines started in the Second Croydon Handicap, which consisted of three laps of the course, or a distance of 24 miles. Admiral Mark Kerr, who was flying a B.E.2E, with 90 h.p. R.A.F. engine, was given 36 seconds' start over Major Petre on the 110 h.p. le Rhone Avro. The Admiral, who is no longer a young man and who is probably older than any other pilot now flying, got away very well indeed, and, after crossing the starting line, made a fine left-hand turn to get on his course. As the machines came around the first time, the Avro did not appear to have gained much on the B.E., but on the second lap Petre managed to shorten the distance between them, and on the third and last lap he managed to get in front, coming in about a minute ahead of the B.E. In landing Admiral Kerr had a slight mishap, fortunately, however, without injury to himself, although the old B.E. was somewhat damaged. Touching a little too hard, the machine bounced, but the Admiral opened out his engine, and it looked as if he was going to take off again and make a circuit to land. He swung around to the right before the machine had gathered sufficient speed, and the



A NEW AVRO OLEO UNDERCARRIAGE: The Avro-Viper, flown by Mr. Bert Hinkler in the races at Croydon, was fitted with an oleo undercarriage, which appeared to have exceptionally good shock-absorbing qualities, and entirely prevented bouncing, even in a pancake landing.

B.E. described a very small circle, banked up at a rather steep angle, and, losing flying speed, she sank to the ground, touching with the right wing tip and her nose. Fortunately she did not turn over, and the Admiral, whose very sporting spirit was greatly admired by all, was able to climb out of the machine unaided. That he was little the worse for his

Experience was clear when, shortly afterwards, he went up as passenger with Raynham and brought down three balloons with a sports gun, the first two being particularly pretty shots.

While visitors were waiting for the last race to start, Mr. Newall made a double parachute descent in "Guardian Angel" parachutes from a very low altitude, demonstrating how quickly these parachutes open.

The last race was to have been for machines occupying the first three places in the Waddon and Croydon Handicaps, the race being described as the First Spring Handicap, and the course consisting of four laps. There were, however, only three starters: Petre (9 mins. 36 secs.), Hinkler (3 mins. 43 secs.), and Stocken (scratch), and the finishes were: Stocken first, Petre second, and Hinkler third.

A long interval now followed before the start of the balloon sniping competition. Ultimately this event was run off, in about the best weather of the whole day. It consisted in sending up a machine with a gunner in the rear cockpit, provided with an ordinary shot gun. After the machine had

climbed for 3 minutes, three balloons were released at intervals of 2 minutes, and competitors had to destroy the balloons in the shortest time, a limit of 10 minutes being imposed. There were two competitors in this event, Admiral Mark Kerr, who was piloted by F. P. Raynham on an Avro, and Lieut.-Col. Risk, whose pilot was Capt. Muir, also on an Avro. Both competitors did some extremely pretty shooting, and the event was won by Admiral Kerr, who brought down his three balloons in the shortest time. This was hailed with satisfaction by such of the visitors as had had the hardihood to remain to watch this competition, as it was by then getting pretty late. There had been great concern when there was a possibility of the popular Admiral having been injured, and his excellent shooting was an indication that his hand was steady enough after his experience in landing the B.E. Everyone admired his sporting spirit, and it is highly probable that if one could have taken a ballot among the visitors, the gallant Admiral would have topped the list for popularity. May he long live to give his splendid example to the younger generation.

THE DEATH OF SIR ROSS SMITH AND LIEUT. BENNETT

Sad Fatality on the Eve of Great Flight

It is with the deepest regret that we have to record this week the death of Sir Ross Smith and Lieutenant Bennett in an aeroplane crash, following a test flight at Brooklands, on the machine on which these two and Sir Keith Smith were to have attempted the flight around the world, to which detailed reference was made in FLIGHT last week.

The happenings on the day of the accident have been dealt with at such length in the daily press that there is no need for us to do more here than give the briefest *résumé* of the facts, such as they have emerged. During the morning of Thursday, April 13, the Vickers "Viking IV" Amphibian, 450 h.p. Napier "Lion" engine, was brought out of its shed at the Weybridge works of Vickers, Ltd., and, at 11.30 a.m., Capt. Cockerell, the well-known Vickers test pilot, having with him as passengers Sir Ross Smith and Lieut. Bennett, took the machine off, and flew for about half an hour. Sir Ross Smith was sitting on Capt. Cockerell's left in the front cockpit, while Lieut. Bennett sat in the cockpit behind, just in front of the wings. According to Captain Cockerell, the machine behaved splendidly, and there was nothing to indicate that anything whatever was wrong, either with it or with the engine, which ran perfectly.

On landing, Capt. Cockerell handed the machine over to Sir Ross Smith, who took it up in a perfect manner, still with Lieut. Bennett in the aft cockpit. The machine climbed to a height of 1,200 to 1,500 ft., when it was seen to get into a spin. At first it was thought that Sir Ross was "stunting," which surprised everyone, but it was soon realised that the spin was not intentional. After coming down in a spin to about 700 or 800 ft., it looked as if Sir Ross was regaining control, but immediately afterwards the machine commenced spinning again, until quite close to the ground. By then the spin had stopped, and the machine was in a straight nose dive. It was then, however, too late to flatten out, and the machine crashed nose first into some tall fir trees, both occupants being killed instantly.

At the inquest the coroner returned a verdict of death by misadventure, stating it was not known how the machine got into a spin. Whether it was an error of judgment on the part of Sir Ross would never be known. It was proved by the evidence that there was no defect in the actual machine itself, and there was no collapse of any part. The engine behaved perfectly. The jury expressed sympathy with the relatives.

We are sure all readers of FLIGHT will join us in adding our expression of sympathy to all the others. To Sir Keith, who saw the accident, and to his and Lieut. Bennett's parents, the loss is the heaviest of all, but the death of these two gallant officers and gentlemen will be keenly felt the world over, wherever indomitable will and the courage to undertake great things are appreciated. To the directors of Vickers, of Napier, of "Shell's," and last, but by no means least, all those workers who had had a part in building the machine, into which they had put the very best of which they were capable, the blow is, indeed, a heavy one, and the loss is in this case in actual fact irreparable. The flight may be carried through—we sincerely trust it will be carried through—but a second attempt can never be quite the same, no matter how successful nor by whom undertaken.

Messages of Condolence

SIR KEITH SMITH has received the following telegram from the King and Queen:—

The King and Queen are shocked to hear of the terrible accident in which your brother, Sir Ross Smith, and Lieut. Bennett lost their lives yesterday as they were preparing to embark on yet another daring exploit. Their Majesties feel that by their death the Empire has lost two of its foremost pioneers of flight, and I am desired to assure you of their heartfelt sympathy with you in your sorrow.

"PRIVATE SECRETARY,
"Windsor Castle, Friday"

From the Duke of York, Sir Keith Smith has received the following letter:—

"The Duke of York was deeply grieved to hear of the tragic death of your brother. His Royal Highness has commanded me to express to you his very real sympathy in the heavy loss you have sustained in the death of your brother, who had done so much splendid work, not only for British aviation, but the British Empire as a whole.

"LOUIS GREIG,
"Comptroller to the Duke of York"

Air-Marshal Sir Hugh Trenchard wrote:—

"I am intensely grieved to get the news of the fatal accident that has overtaken your brother, and I hasten to express on behalf of all ranks of the Royal Air Force our deep sorrow. May I say on my own behalf that I am inexpressibly grieved, and that you have my great sympathy with you in the loss of your brilliant brother."

The Minister for Air has sent the following message to Sir Keith Smith:—

"On behalf of the Air Ministry and myself, please accept my most sincere condolences on the tragic death of your brother and of Lieut. Bennett on the eve of your round-the-world flight.

"FREDERICK GUEST"

The Air Ministry has sent the following message to the Australian Government:—

"On behalf of the Secretary for Air and the Air Council, I am commanded to request you to convey to the relatives of Sir Ross Smith and Lieut. Bennett their profound sympathy at the tragic accident which has brought about the deaths of these two distinguished pioneers of aviation, on the eve of their flight round the world, a flight which it had been hoped would not only have eclipsed their historical flight to Australia, but would also have been a further step forward in the linking up by air of the many countries of the world as well as of the different parts of the British Empire. The sudden ending of two lives of such promise will everywhere be felt as an irreparable loss."

The following telegrams have been exchanged between the French and British Air Services:—

From M. Laurent Eynac, Under-Secretary of State for Air, Paris:—"Deeply touched by the fatal accident of which Messrs. Ross Smith and Bennett are the victims. The entire French Air Service shares the mourning for the cruel loss sustained by the British Air Service of the two pilots of great renown."

From the Under-Secretary of State for Air, London:—"Deeply grateful for your telegram of condolence conveying sympathy of France in the terribly sad accident to Ross Smith and Bennett. The loss to aviation is indeed world-wide."

LONDON TERMINAL AERODROME

Monday Evening,

April 17, 1922.

PASSENGER traffic has been rather disappointing over the Easter holidays. Quite an influx was expected, but it was not until Saturday that there was any sign of anything out of the ordinary. It is possible that the two recent fatal accidents, both of which gained so much publicity, were to some extent responsible; though, on the other hand, it is increasingly apparent that a bad crash has little adverse effect on traffic. On Saturday there were 50 passengers in and out of the air-station in spite of the gale which, at times, reached almost hurricane force at 2,000 ft.

Daimler Airways have abandoned the idea of running a regular service during April, but are hoping to put on their full four services a day in May. In the meantime, they are running an occasional service to supply the demand for seats, and the new D.H.34, which arrived from Stag Lane last Monday, has made two return trips during the week, being used in the meantime for practice flights for the pilots. The machine which forced-landed and turned over at Berck has been dismantled, packed up, and sent by boat and train to Stag Lane to be rebuilt. The first of the K.L.M. monoplanes arrived on Saturday, piloted by Mr. Geysendorfer, and will be ready for the re-opening of the Rotterdam and Amsterdam service on Tuesday, the 18th. Mr. Leverton, whose offices are somewhat out of the way now that there is such a bewildering show of "paint and pomp" along the main-entrance road, has managed to secure six feet of frontage on the aerodrome "Broadway," and has erected a K.L.M. sign and constructed a fenced-in path leading to his office.

Handley Page Transport have now moved into their new offices, and these are really the last word in airway sumptuousness. The long baggage counter, and the ticket counter with its brass rails, give the place a very businesslike air, and there was some excuse for one of the aerodrome's most impecunious inhabitants trying to cash a cheque through the brass rails.

The Anti-Collision Conference

THIS Handley Page office was used for a meeting of the various air-company managements and pilots on Thursday afternoon to discuss improvements in the organisation of the airways with a view to preventing further accidents, and more especially to plan out routes and rules which would make the chances of air collisions practically nil. Several resolutions were agreed to, the principal being that the pilots should hold meetings amongst themselves to plot out definite routes, all marked by well-known and easily distinguished landmarks, and that once these routes are fixed all "air expresses" must keep to the right of them. It was further resolved that all machines should carry wireless, and it is notable in this connection that the French representatives, whose machines are not fitted with wireless, were as emphatic on this point as were the British. Several further resolutions dealing with the improvement of wireless communication and weather reports, were also passed, and it is understood that these have been forwarded to the Air Ministry for their consideration and, one hopes, "necessary action, please."

The pilots have already held tentative meetings; but from all accounts the business of fixing the routes is not at all easy. Each pilot has his own favourite land-marks on certain parts of the routes, and there appears nothing like agreement as to which are the best, or as to which route offers the most suitable all-weather conditions.

In connection with the collision over France on April 7, the staffs at the air-station have sent a wreath for M. Mire, and, when the Daimler D.H.34 arrived from Paris on Friday evening, it had on board a similar tribute from the pilots and staffs at Le Bourget for Mr. Duke.

British Daily Service to Brussels

THE Instone Air Line hope to open their London-Brussels service on May 1, with one machine in each direction daily. Major Greer, who has been C.A.T.O. at Croydon since its inception, is to be their Brussels manager, and the various staffs at the air-station are to present him with a gold cigarette-case when he leaves to take up his new duties. Capt. Baker is now to be in charge at Croydon, while Mr. Davies, who has been C.A.T.O. at Lympne, is also coming to Croydon, leaving Comdr. Deacon in sole charge at Lympne.

On Friday the first of the Renault-Goliaths arrived from Paris. The Messageries Aériennes are to augment their fleet by a number of these machines, which are to be fitted with gas-starters. The first arrival, however, is not so fitted, and, in order to swing the propellers, it is necessary to stand on a platform or truck, making the whole proceeding somewhat

hazardous. The exhaust pipes are led back over the petrol tanks, but I am assured that this is not in the least dangerous. These engines are a distinct improvement, and the installation of Renaults should make the "Goliath" one of the best of commercial "air expresses."

Long-distance Air Parcels

THERE have been a surprising number of parcels arriving by the Messageries Aériennes from Paris, and a number of these were originally consigned by air from Prague, via the Franco-Rumanian air line. It is possible in this way for a parcel dispatched from Prague in the morning of one day to be delivered in London in the afternoon of the day following, which, considering the state of many of the European train services at present, must mean a considerable saving of time.

The competitors in today's air-races have been making practice flights throughout the week. Vice-Admiral Mark Kerr has been flying the Royal Aero Club's B.E.2E., and puts up a very creditable performance. The various Disposal Company's entries have also been given trial runs, and the D.H.9 with the 400 "Liberty" is very much fancied; that is, if it can be induced to start.

The aerodrome has been quite a popular rendezvous during the holidays. On Friday there was a constant stream of people in and out of the public enclosure, and Mr. Muir was taking up quite a number of joy-riders.

Making Assurance Doubly Sure

AN arrangement which does away with any delay that might be occasioned by unavoidable forced landings has been made by the Messageries Aériennes, in conjunction with the Compagnie Générale Transatlantique. On the Paris-Havre service, in connection with the sailings of liners for New York, it is of vital importance that, no matter what happens, passengers should not miss their ship; and, in order to make this practically certain, the steamship company have a fleet of powerful cars at Rouen, which, in case of an aeroplane forced landing, immediately rush to the spot and, picking up the passengers, transport them by road to Havre.

Mr. L. H. Harris, who has an air-model studio on the aerodrome, has turned out some very fine models during the winter months. His scale models of the Vickers-Vimy "City of London," and of the winner of the Aerial Derby, the Gloucestershire Mars I, are particularly fine, and photographs of them have been mistaken for air views of the real machines even by those well acquainted with the originals.

The Grands Express have again had to postpone their night journey over the London-Paris airway. They wish to make sure that there shall be no failure that can possibly be avoided on this first night flight, and are waiting for a full moon and a clear night to occur simultaneously. M. Rene Labouchere is to pilot the Goliath when the attempt is made, and this in itself is an augury of the flight's success.

Mr. Larry Carter, who is now piloting for Handley Page Transport, made his first flights in a D.H.18 during the week, and on Thursday flew this machine to Paris, returning to Croydon on Friday, and making very good time.

The semi-final for the Napier football cup was played on Thursday between the C.A.T.O. Customs and Transport and the Meteorological Section, and resulted in a win for the former. None of the air-lines has been able to raise a team this year, and the final will be fought out between two sections of the Air Ministry staff.

Capt. Greig, who was with Aircraft Transport & Travel from the early days, and was later with Air Express, Ltd., is now representing Basil S. Foster, Ltd., on the aerodrome. He will have plenty of work in connection with the big new petrol-plant that the Anglo-American Oil Co. are putting down, as they will have no fewer than nine pumps on the aerodrome when this plant is completed.

A forced landing Mr. Shaw had in France the other afternoon, while piloting a Handley Page D.H.18, had one extremely amusing aspect. Engine trouble causing him to pick a landing in the first suitable field, he pulled up very quickly after his wheels had touched ground, and, climbing from his cockpit, moved back to reassure his passengers. But, though it had been a connecting-rod in the engine that had broken, and Mr. Shaw had been obliged to do some pretty rapid manœuvres in order to get down into the field he had chosen from a height of about 1,000 ft., he not only found his passengers quite unmoved, but one of them, who had been taking a nap while in the air, was still sitting fast asleep in his comfortable chair, not having been awakened either by the engine stoppage or by Mr. Shaw's twists and turns as he came gliding down in a quick descent.

THE LONDON-CONTINENTAL SERVICES

FLIGHTS BETWEEN APRIL 2 AND APRIL 15, INCLUSIVE

Route†	No. of flights*	No. of passengers	No. of flights carrying		No. of journeys completed†	Average flying time	Fastest time made by	Type and (in brackets) Number of each type flying
			Mails	Goods				
Croydon-Paris ...	62	162	25	52	53	h. m. 3 8	D.H. 4a G-EAWH (1h. 50m.)	B. (5), Br. (1), D.H. 4 (2), D.H. 18 (4), D.H. 34 (3), G. (9), H.P. (1), Sp. (3), V. (1).
Paris-Croydon ...	61	241	12	42	53	3 25	D.H. 4a G-EAWH (1h. 50m.)	B. (5), Br. (1), D.H. 4 (2), D.H. 18 (3), D.H. 34 (3), G. (11), H.P. (1), Sp. (2), V. (1).
Totals for 2 weeks ...	123	403	37	94	106			

* Not including "private" flights.

† Including certain journeys when stops were made *en route*.

‡ Including certain diverted journeys.

Av. = Avio. B. = Breguet. Br. = Bristol. Bt. = B.A.T. D.H. 4 = De Havilland 4, D.H. 9 (etc.).
F. = Fokker. Fa. = Farman F.50. G. = Goliath Farman. H.P. = Handley Page. M. = Martinsyde. N. = Nieuport.
P. = Potez. R. = Rumpler. Sa. = Salmson. Se. = S.E. 5. Sp. = Spad. V. = Vickers Vimy. W. = Westland.

The following is a list of firms running services between London and Paris, Brussels, etc., etc.:—Co. des Grandes Expresses Aériennes; Daimler Hire Ltd.; Handley Page Transport, Ltd.; Instone Air Line; Koninklijke Luchtvaart Maatschappij; Messageries Aériennes; Syndicat National pour l'Étude des Transports Aériens; Co. Transaérienne.

NOTICE TO GROUND ENGINEERS

Bristol "Tourer" and Bristol "Fighter" Aircraft :
Aileron Controls.

1. THE attention of ground engineers is directed to the aileron control cable fairlead which passes through the compression rib adjacent to the aileron control pulley in the wing on Bristol "Tourer" and Bristol "Fighter" aircraft. Instances have occurred of aileron control cables badly fouling these fairleads during normal travels of the ailerons.

2. When fitting modified pulley guards as detailed in Notice to Ground Engineers No. 9 of 1921, or in cases where they have been fitted, it will be necessary for the fairlead through the compression rib adjacent to the pulley to be deleted. The hole remaining in the compression rib should be elongated to allow the aileron control cable to clear at all positions of the pulley.

(No. 4 of 1922.)

Spain Scores with 'Planes in Morocco

ON April 10 the Spanish Air Force in Morocco made an effective raid, according to advices from Madrid, from end to end of the Riff coast, a distance of 200 miles. Several hundred bombs were dropped on the hostile tribes opposite the Peñons. The Spanish forces now have two well-organised aerodromes—the one at Nador, which is also the base of the hydroplane squadron, and the other at Tetuan. The open-air markets held by the Moors provided excellent targets.

Wazirs still Worrying

ANOTHER instance of the rapid effects of aircraft work in the East is recorded in the dispersal of 2,000 Wazir outlaws who had been besieging Wana, under the notorious Abdul Razak from over the Afghan border. Encouraged by the

Naib Tahsildar, the political officer in charge, the Khassadars, although Wazirs, *The Times* Simla correspondent states, held out from April 4 to 9. On April 7 six aeroplanes from Tank came to the rescue and bombed the besiegers for three days, dispersing them to the hills.

The exploit should increase the moral of the Khassadars, who are practically at the beginning of their career in the Waziristan. It also indicates the potentialities of the Air Force and the necessity of keeping this Force up to the requisite standard of efficiency. The reports suggest that the Air Force is starved for spare parts and spare machines, and it is doubtful whether it will be able to repeat the Wana performance, except as a special effort, in view of the deficiencies mentioned.



“O! for a float in
a 'Fairey' boat':
Mr. C. R. Fairey
—who has been
taking a long
overdue rest
—tries a novel
form of "stream
line." Crossing
the famous ferry
to the third tee
at Cannes Golf
Course.

THE ROYAL AIR FORCE

London Gazette, March 28, 1922
General Duties Branch

The following are granted short service commns. as Flying Officers, with effect from, and with seniority of, the dates indicated:—H. J. T. Saint, D.S.C.; March 13. M. Tallentire; March 15.

Pilot Officer (on prob.) W. Pritchard, M.M., resigns his short service commn.; March 29. Flight-Lieut. A. C. H. Groom, D.F.C., relinquishes his short service commn. on account of ill-health contracted on active service, and is permitted to retain the rank of Capt.; March 29. Flying Officer D. I. M. Kennard relinquishes his short service commn. on account of physical unfitness for flying duties, and is granted the rank of Capt.; March 29.

Stores Branch

Flight-Lieut. A. G. N. Belfield is granted a permanent commn. as a Flight-Lieut., with effect from September 12, 1919, and is transferred to the Stores Branch for Accountant duties, with effect from October 25, 1921 (*Gazette* of September 12, 1919, appointing him to a short service commn. is cancelled). Flying Officer R. F. C. Metcalfe is granted a permanent commn. as a Flying Officer, with effect from December 5, 1919, and is transferred to the Stores Branch for Accountant duties, with effect from December 26, 1921. (*Gazette* December 5, 1919, appointing him to a short service commn. is cancelled). The seniority of officers granted commns. in the Stores Branch for Accountant duties is provisional only. The final seniority list of all such officers will be promulgated when the establishment is completed.

Medical Service

Flight-Lieut. D. Le Bas is granted a short service commn., retaining his present substantive rank and seniority; April 1. The following Capts., Army Dental Corps, are granted temp. commns. as Flight-Lieuts., while attached for duty with the R.A.F.; February 21. They will continue to receive emoluments from Army funds:—Capt. H. E. Flavell, Capt. R. M. King.

London Gazette, March 31, 1922

Memoranda

F. McK. Miller is granted a temp. commn. as a Pilot Offr. for service with the Electrical Services Works Company; April 1. Pilot Offr. W. J. Root relinquishes his temp. commn. on ceasing to be empld.; April 1.

London Gazette, April 4, 1922

General Duties Branch

C. B. Greet is granted a short service commn. as a Pilot Off. on probation, with effect from, and with seny. of, April 1. Flying Off. G. Verden is placed on the retired list on account of ill-health, contracted on active service; April 5. The short service commn. of Pilot Off. on probation, W. I. N. Grant, is terminated on cessation of duty; March 18.

Stores Branch

The short service commn. of Pilot Off. on probation, C. B. Greet, is terminated on transfer to the Gen. Duties Branch; April 1.

Medical Service

V. R. Smith is granted a short service commn. as a Flight-Lieut., with effect from, and with seny. of, March 18. Temp.-Capt. C. Fox-Pitt, Dental Surgeon, granted a temp. commn. as a Flight-Lieut. while attached for duty with the R.A.F.; March 8 (he will continue to receive emoluments from Army funds). Flight-Lieut. S. E. Duff, M.B., resigns his short service commn., and is permitted to retain rank of Capt.; April 5.

Memoranda

Sec.-Lieut. J. Hogan to be Lieut. (tech. grade A), without pay and allowances of that rank (June 22, 1919 (since demobilised). Hon. Sec.-Lieut. R. D. Saunders relinquishes his hon. commn. on joining the Army; March 7.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

Air Commodores.—H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., from Headquarters Inland Area (Inland Area) to R.A.F. Staff College (Inland Area) as Commandant. 1.4.22. R. H. Clark-Hall, C.M.G., D.S.O., from Air Pilotage School (Cadre) (Inland Area) to R.A.F. Staff College (Inland Area) for duty as Instructor. 1.4.22.

Wing Commanders.—P. B. Joubert de la Ferte, C.M.G., D.S.O., from Air Pilotage School (Cadre) (Inland Area) to R.A.F. Staff College (Inland Area) for duty as Instructor. 1.4.22. W. R. Freeman, D.S.O., M.C., from Air Pilotage School (Cadre) (Inland Area) to R.A.F. Staff College (Inland Area) for duty as Instructor. 1.4.22. C. H. K. Edmonds, D.S.O., O.B.E., from Air Pilotage School (Cadre) (Inland Area) to R.A.F. Staff College (Inland Area) for duty as Instructor. 1.4.22. A. T. Whitelock from Headquarters, R.A.F., India to R.A.F. Depot (Inland Area) (Supernumerary). 2.3.22 to join 1.5.22. J. Mead, O.B.E., M.C., from R.A.F. Depot (Inland Area) to Inland Area Aircraft Depot (Inland Area). 27.3.22. J. E. A. Baldwin, D.S.O., O.B.E., from No. 7 Group Headquarters (Inland Area) to R.A.F. Staff College (Inland Area). 3.4.22.

Squadron Leaders.—B. E. Sutton, D.S.O., O.B.E., M.C., from Air Pilotage School (Cadre) (Inland Area) to R.A.F. Staff College (Inland Area), for duty as Instructor. 1.4.22. G. S. M. Insall, V.C., M.C., from No. 6 Flying Training School (Inland Area) to R.A.F. Depot (Inland Area) (Supernumerary). 1.4.22. R. F. S. Morton, from Inspector of Recruiting (Liverpool) (Coastal Area) to No. 2 Flying Training School (Inland Area). 3.4.22. A. S. Morris, O.B.E., from No. 6 Flying Training School (Inland Area) to No. 1 Flying Training School (Inland Area). 1.4.22. R. S. Maxwell, M.C., D.F.C., from Air Ministry (Directorate of Training and Organisation) to R.A.F. Depot (Inland Area) (Supernumerary). 1.4.22.

Flight Lieutenants.—C. B. Dick-Oleland, from Air Pilotage School (Cadre) (Inland Area) to R.A.F. Staff College (Inland Area) for duty as Adjutant. 1.4.22. C. H. Keith, from No. 230 Squadron (Coastal Area) to R.A.F. Cadet College (Flying Wing) (Cranwell), for duty as Instructor in Aerial Navigation and Pilotage. 15.4.22. F. Tedman, M.B.E., from R.A.F. Depot (Inland Area) to R.A.F. Base, Gosport (Coastal Area). 4.4.22. J. Roberts,

from Headquarters (Inland Area) to R.A.F. Depot (Inland Area) (Supernumerary). 1.4.22. E. Meynell, D.C.M., from R.A.F. Depot (Inland Area) to Headquarters (Inland Area). 1.4.22. H. S. Shield M.C., from R.A.F. Depot (Inland Area) to Armament and Gunnery School (Inland Area). 3.4.22. G. C. Bailey, D.S.O., from Central Flying School (Inland Area) to School of Photography (Inland Area) (Supernumerary). 3.4.22. H. G. P. Rees, from No. 1 Wing Headquarters (India) to R.A.F. Depot (Inland Area) (Supernumerary). 23.2.22. to join 1.5.22. C. Fox-Pitt to R.A.F. Depot Inland Area (Supernumerary). On attachment from Army, 8.3.22. C. E. H. James, M.C. from School of Photography (Inland Area) to No. 1 Flying Training School (Inland Area). 3.4.22. W. S. Caster, M.C., from No. 6 Flying Training School (Inland Area) to No. 24 Squadron (Inland Area). 28.3.22. C. Musgrave, A.F.C., from No. 6 Flying Training School (Inland Area) to No. 100 Squadron (Inland Area). 31.3.22. H. M. K. Brown, from No. 6 Flying Training School (Inland Area) to No. 39 Squadron (Inland Area). 31.3.22. A. S. Maskell, from Inspector of Recruiting (Portsmouth) (Coastal Area) to R.A.F. Depot (Inland Area) (Supernumerary). 1.4.22. N. Keeble, D.S.C., D.F.C., from No. 6 Flying Training School (Inland Area) to R.A.F. Depot (Inland Area) (Supernumerary). 1.4.22. A. H. Wann, from R.A.F. Airship Base (Coastal Area) to Headquarters (Coastal Area) (Supernumerary). 2.4.22. A. J. Briddon, from R.A.F. Depot (Inland Area) to Headquarters (Coastal Area). 3.4.22. A. J. Capel, from R.A.F. Cadet College (Ground wing) (Cranwell) to Headquarters R.A.F., Cranwell. 3.4.22. L. N. Hollinghurst, D.F.C., from R.A.F. Depot (Inland Area) to R.A.F. Cadet College (Ground Wing) (Cranwell). 31.3.22. A. C. Snow, from R.A.F. Depot (Inland Area) to No. 11 Wing Headquarters (Inland Area). 31.3.22. L. H. Slatter O.B.E., D.S.C., D.F.C., from half-pay list to No. 230 Squadron (Coastal Area). 21.3.22. H. O. Long, D.S.O., from Instrument Design Establishment (Inland Area) to Aeroplane Experimental Establishment (Coastal Area). 15.4.22. R. E. P. Wigglesworth, D.S.C. The notification which appeared wherein this officer was posted from R.A.F. Depot to Inland Area Aircraft Depot, with effect from 20.3.22, is hereby cancelled. J. H. Hagon, from R.A.F. Depot (Inland Area) to School of Photography (Inland Area). 18.4.22. J. M. McEntegart, from Air Ministry (Director-General of Supply and Research) to R.A.F. Depot (Inland Area) (Supernumerary). 1.4.22.

IN PARLIAMENT

Aeronautical Research Committee

CAPTAIN VISCOUNT CURZON, on April 6, asked the Secretary of State for Air how many paid members comprise the Aeronautical Research Committee; how much is paid to them and how they are paid; how many sittings have been held during the last year; what was the total expenditure involved; have the number of sittings increased; and will he reduce the expenditure upon this service?

Following is the reply:

The Aeronautical Research Committee works mainly through Sub-committees and including the latter, the paid members as at December 31 last numbered 31. They are paid, in addition to travelling expenses, 10 guineas each per sitting, reducible to 5 guineas per sitting after 10 sittings, subject to an overriding maximum of £200 for each member of one Committee, of £350 for each member of two Committees, and of £450 for each member of three or more Committees; payment is made on vouchers certified by the Secretary and submitted to the Air Ministry. During the year ending December 31, 1921, 88 meetings in all took place. The total expenditure in that year was £4,861, being £4,247 for fees and £614 for travelling expenses. The number of meetings has, on the whole, been considerably reduced. Steps to reduce expenditure have already been taken, and it is expected that not more than £2,000 will be spent on fees in the financial year 1922-23.

Bomb Attacks on Battleships

MR. RAPER on April 10 asked the Prime Minister whether his attention has been drawn to the substantial divergence of opinion between the Air Ministry and the Admiralty regarding the proved potentialities of aircraft in sinking battleships and the experiments carried out in the United States; and whether he will make a statement thereon?

Mr. Chamberlain: It is not considered that it would be in the public interest to make a statement on this matter at present.

Mr. Raper: Is it not a fact that the speech of the First Lord of the Admiralty

in another place on March 30 was fair neither to the Navy nor to the Air Force, and was calculated surely to belittle the work of the Air Force?

Mr. Chamberlain: I am afraid I am not sufficiently familiar with what took place in another place, and I could not answer that question without notice.

London-Paris Air Service Accident

MR. RAPER on April 10 asked the Secretary of State for Air if he will make a statement regarding the lamentable accident to the London-Paris passenger aeroplanes on Friday last, and, further, whether in order to reassure the public as to the safety of air travel he will state the total number of casualties which have occurred and the total number of passengers carried since the different London-Paris services were inaugurated?

Captain Guest: I have as yet no information which would enable me to amplify the Press reports of this regrettable accident, which is, I am glad to say, of a kind that is very rare in the air. The British subsidised London-Paris air service carried nearly 6,000 passengers during the year just ended, or nearly 1,100 machine voyages, without a single fatal accident. Comparable figures of French London-Paris air service are, approximately 1,600 machine voyages, carrying 4,500 passengers.

Air Council

REAR-ADMIRAL SUETER asked the Secretary of State for Air whether he has considered the desirability of arranging with the Admiralty for the appointment of a junior admiral, with knowledge of fleet work, submarines, and aircraft, to the Air Council to give advice on naval matters connected with the air?

Captain Guest: As the hon. and gallant member is no doubt aware, the question of how best to co-ordinate the Services is under active consideration by the Government, and I have no doubt that, in the course of the thorough examination of the subject, his suggestion will come under review.

(Concluded from page 229.)

with shutters operated from the cockpit, is so mounted as to be unaffected by engine vibration, even in the case of a badly missing engine. It might also be mentioned that the complete wing structure, and, if desired, the engine unit, can be removed after undoing eight bolts.

As already mentioned, the petrol tank is mounted in the hull, and the fuel is fed to the carburettor by pressure from a pump. This is the usual arrangement on seaplanes, and for some reason has not been found to give as much trouble as does a similar petrol system on a land machine. One would prefer gravity feed, but it is difficult to see how this could be attained, and practical experience appears to indicate that it is not really necessary on a machine of this type.

The wings are of usual design, with one pair of inter-plane struts on each side. Bracing is by stream-line wires. Both upper and lower planes are provided with ailerons, controlled by cables in the usual way. Attention has already been called to the method of mounting the engine independently of the wings, and apart from this fact the wings do not possess any unusual features. The fittings are very robust, and treated to withstand the action of salt water. Also they are very accessible and easily renewed. The machine is steadied laterally, when on the water, by wing tip floats of the usual Supermarine type.

Figures relating to the performance have already been given. The following are the main characteristics of the Supermarine "Sea King":—

Length of hull, 24 ft. 9 ins.; wing span, 32 ft.; chord 5 ft. 9 ins.; gap (maximum), 6 ft.; area of main planes, 352 sq. ft.; weight of machine (empty), 2,115 lbs. The useful load is composed as follows:—Pilot, 180 lbs.; Lewis gun and six double trays, 100 lbs.; instruments, 20 lbs.; equipment, 30 lbs.; petrol (50 gallons), 365 lbs.; oil (4 gallons), 40 lbs.; total useful load, 735 lbs. Weight of machine fully loaded, 2,850 lbs. Wing loading, 8.1 lbs./sq. ft. Power loading, 8.4 lbs./h.p.

PERSONALS

Death

Lieut.-Col. FRANCIS MAUDE-ROXBY, O.B.E., D.F.C., Legion of Honour, who died on April 12 at Marlow, Bucks, of acute pneumonia, was the fourth son of the late Rev. Henry Meux-Roxby, of Buckden, Huntingdonshire.

Items

The will of Group Captain ALAN JOHN LANCE SCOTT, C.B., M.C., D.F.C., of Wilton Street, S.W., Secretary to the Secretary of State for Air, who died on January 16 last, aged 39, has been proved at £3,389. Letters of administration have been granted to his mother as the only next-of-kin.

The will of the late Squadron Leader GEOFFREY MAIN THOMAS, D.F.C., R.A.F., of the Airship Station, Pulham, St. Mary, Norfolk, formerly of Black River, Jamaica, who was killed at Hull, in the disaster to "R.38," on August 28, aged 26 years, has been proved at £1,327.

Royal Air Force Club

DANCES at the Club as follows have been approved by the Committee:—

April 21, May 5, and May 19, from 9 p.m. to 2 a.m. (Tickets, 10s. 6d.)

May 31 (Derby night), from 10 p.m. to 3 a.m. (or later). (Tickets, 15s.)

The number of dance tickets, which includes buffet supper, cups, iced coffee, etc., will be limited to 200.

It is considered wiser to discontinue the dances during the summer months of June, July, August and September.

The Zeebrugge Annual

THE Annual Zeebrugge Dinner will be held at the Café Royal on the Eve of St. George's Day, April 22. All R.A.F. officers who took part in the operations leading up to and culminating in the attacks on Zeebrugge and Ostend are invited to be present. Tickets one guinea each.

Any officers who have not yet received notification, and who wish to attend, should communicate with Air Commodore C. L. Lambe, Air Ministry.

R.A.F. Hon. Cricket Secretary

THE duties of Hon. Secretary of the R.A.F. Cricket Association have been taken over by Group Capt. N. D. K. MacEwen, C.M.G., D.S.O., who commands the Central Flying School at Upavon. Group Capt. N. J. Roche, O.B.E., whom Group Capt. MacEwen succeeds, is shortly proceeding overseas.

THE LONDON AERO-MODELS ASSOCIATION

A VERY successful meeting was held at Headquarters, 20, Great Windmill Street, Piccadilly, W., on Thursday, the 13th inst. Four new members joined the Association, namely, Mr. Houlberg, Mr. W. Hersom, Mr. Brough and Mr. Bedford; all these gentlemen are aero-modellists of repute and already have proved themselves energetic supporters. The competition which was to have been held on Sunday, the 16th, at Wormwood Scrubs, was postponed on account of the unsuitable weather conditions, there being a wind estimated by those present at over thirty miles per hour. There were approximately forty members present and in spite of the conditions many of the members unpacked their models and gave an excellent demonstration of what model aeroplanes can do in a high wind. The most prominent display was given by the members from Leytonstone, and also Mr. L. Grey, whose enclosed model gave wonderful performances, to the admiration of the general public who attended in large numbers.

The competition will be held on Sunday next, the 23rd inst., at Wormwood Scrubs, at 11 a.m., when it is hoped that members will put in an even better attendance than they did last Sunday. Meetings are held every Thursday at Headquarters, 20, Great Windmill Street, at 7.30 p.m., where Mr. A. E. Jones, Hon. Sec., or the Assistant Secretaries, Mr. Hatfull or Mr. Rippon, will be pleased to give full particulars of the Association.

PUBLICATIONS RECEIVED

Annual Report of the Smithsonian Institution, 1919. The Smithsonian Institution, Washington, D.C., U.S.A.

Technical Note No. 87. Hydrostatic Test of an Airship Model. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Technical Note No. 92. Full Scale Determination of the Lift and Drag of a Seaplane. By Max M. Munk. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Report No. 134. Performance of Maybach 300 h.p. Airplane Engine. National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motors. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1921

Published April 13, 1922

- 1,184. O. EBERSBACH. Dirigible balloons. (157,276).
3,876. ZEPPELINWERK-LINDAU GES. and C. DORNIER. Wings, etc. (158,840).
7,649. J. H. W. GILL and E. D. HOBSON. Screw-propellers and similar appliances of the axial-flow type. (177,047.)

If you require anything pertaining to aviation, study "FLIGHT's" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages iii and xiv).

NOTICE TO ADVERTISERS

All Advertisement Copy and Blocks must be delivered at the Offices of "FLIGHT," 36, Great Queen Street, Kingsway, W.C.2, not later than 12 o'clock on Saturday in each week for the following week's issue.

FLIGHT

The Aircraft Engineer and Airships

36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telegraphic address: Truditor, Westcent, London.

Telephone: Gerrard 1828.

SUBSCRIPTION RATES

"FLIGHT" will be forwarded, post free, at the following rates:—

UNITED KINGDOM				ABROAD*			
	s.	d.			s.	d.	
3 Months, Post Free...	7	7		3 Months, Post Free...	8	3	
6 " " " " " "	15	2		6 " " " " " "	16	6	
12 " " " " " "	30	4		12 " " " " " "	33	0	

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates.

* European subscriptions must be remitted in British currency

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 36, Great Queen Street, Kingsway, W.C.2, and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.